ORDER FOR SUPPLIES OR SERVICES

PAGE 1 OF PAGES 4

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER: 09/14/2020

2. CONTRACT NO. *(If any)*: 68HERC20D0016

3. ORDER NO.: 68HERC20F0287

4. REQUISITION/REFERENCE NO.: PR-R5-20-00258

5. ISSUING OFFICE *(Address correspondence to)*:
CAD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: W136
Cincinnati OH 45268-0001

6. SHIP TO:

a. NAME OF CONSIGNEE: CAD

b. STREET ADDRESS: US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: W136

c. CITY: Cincinnati

d. STATE: OH

e. ZIP CODE: 45268-0001

7. TO: Andrew Parker

a. NAME OF CONTRACTOR: TETRA TECH, INC.

b. COMPANY NAME:

c. STREET ADDRESS: 10306 EATON PL STE 340

d. CITY: FAIRFAX

e. STATE: VA

f. ZIP CODE: 220302201

f. SHIP VIA:

8. TYPE OF ORDER

☐ a. PURCHASE
REFERENCE YOUR:

Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.

☒ b. DELIVERY

Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA: See Schedule

10. REQUISITIONING OFFICE: OW

11. BUSINESS CLASSIFICATION *(Check appropriate box(es))*

☐ a. SMALL ☒ b. OTHER THAN SMALL ☐ c. DISADVANTAGED ☐ d. WOMEN-OWNED ☐ e. HUBZone

☐ f. SERVICE-DISABLED VETERAN-OWNED ☐ g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM ☐ h. EDWOSB

12. F.O.B. POINT:

13. PLACE OF

a. INSPECTION: Destination

b. ACCEPTANCE: Destination

14. GOVERNMENT B/L NO.:

15. DELIVER TO F.O.B. POINT ON OR BEFORE *(Date)*: 06/30/2024

16. DISCOUNT TERMS:

17. SCHEDULE *(See reverse for Rejections)*

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	DUNS Number: 198549560 TOCOR: Donna Keclik Max Expire Date: 12/02/2024 InvoiceApprover: Donna Keclik Alt Invoice App: Belinda Montgomery Continued ...					

18. SHIPPING POINT:

19. GROSS SHIPPING WEIGHT:

20. INVOICE NO.:

17(h) TOTAL *(Cont. pages)*: $108,969.38

21. MAIL INVOICE TO:

SEE BILLING INSTRUCTIONS ON REVERSE

a. NAME: RTP Finance Center

b. STREET ADDRESS (or P.O. Box): US Environmental Protection Agency
RTP-Finance Center (AA216-01)
109 TW Alexander Drive
www2.epa.gov/financial/contracts

c. CITY: Durham

d. STATE: NC

e. ZIP CODE: 27711

17(i) GRAND TOTAL: $108,969.38

22. UNITED STATES OF AMERICA BY *(Signature)*: 09/14/2020 ELECTRONIC SIGNATURE

23. NAME *(Typed)*: Gerold D. Young
TITLE: CONTRACTING/ORDERING OFFICER

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER	CONTRACT NO.	ORDER NO.
09/14/2020	68HERC20D0016	68HERC20F0287

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	Admin Office: CAD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001 Period of Performance: 09/15/2020 to 06/30/2024					
1001	Base Period: IDEM Index of Biotic Integrity for Biological Communities in Coolwater Streams. Accounting Info: 20-21-B-28E-000BD4X20-2505-2028CES001-001 BFY: 20 EFY: 21 Fund: B Budget Org: 28E Program (PRC): 000BD4X20 Budget (BOC): 2505 DCN - Line ID: 2028CES001-001 Funding Flag: Complete Funded: $0.00 Accounting Info: 19-E1D-05P2-000B06XP1-2505-2005PEX501-001 BFY: 19 Fund: E1D Budget Org: 05P2 Program (PRC): 000B06XP1 Budget (BOC): 2505 DCN - Line ID: 2005PEX501-001 Funding Flag: Complete Funded: $105,000.00 Accounting Info: 19-E1-05P2-000B06XP1-2505-2005PEX501-002 BFY: 19 Fund: E1 Budget Org: 05P2 Program (PRC): 000B06XP1 Budget (BOC): 2505 DCN - Line ID: 2005PEX501-002 Funding Flag: Complete Funded: $3,969.38				108,969.38	

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H)) $108,969.38

SECTION B - Supplies or Services/Prices

B-1 Local Clauses EPA-B-32-103 LIMITATION OF GOVERNMENT'S OBLIGATION

(a) Severable services may be incrementally funded. Non-severable services shall not be incrementally funded. Contract line item 1001 is severable and may be incrementally funded. For this item, the sum of $108,969.38 of the total price is presently available for payment and allotted to this contract.

(b) For items identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those items for the Government's convenience, approximates the total amount currently allotted for those items to the contract. The Contractor shall not continue work on those items beyond that point. Subject to the clause entitled "Termination for Convenience of the Government," the Government will not be obligated, under any circumstances, to reimburse the Contractor in excess of the amount payable by the Government in the event of the termination of applicable contract line items for convenience including costs, profit, and estimated termination costs for those line items.

(c) Notwithstanding the dates specified in the allotment schedule in paragraph (h) of this clause, the Contractor will notify the Contracting Officer, in writing, at least 10 days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 75 percent of the total amount currently allotted to the contract for performance of the applicable items. The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of the applicable line items up to the next scheduled date for the allotment of funds identified in paragraph (a) of this clause, or to a substitute date as determined by the Government pursuant to paragraph (d) of this clause. If, after such notification, additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause entitled "Termination for Convenience of the Government."

(d) The parties contemplate that, subject to the availability of appropriations, the Government may allot additional funds for continued performance of the contract line items identified in paragraph (a) of this clause and will determine the estimated period of contract performance which will be covered by the funds. If additional funds are allotted, the Contracting Officer will notify the Contractor in writing. The Contractor shall not resume performance of the contract line items identified in paragraph (a) until the written notice is received. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and to the new estimated period of contract performance. The contract will be modified accordingly.

(e) The Government may, at any time prior to termination, allot additional funds for the performance of the contract line items identified in paragraph (a) of this clause.

(f) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default". The provisions of this clause are limited to the work and allotment of funds for the contract line items set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded.

(g) Nothing in this clause affects the right of the Government to otherwise terminate this contract pursuant to the contract clause entitled "Termination for Convenience of the Government".

(h) The parties contemplate that the Government may obligate funds to this contract in accordance with the following schedule:

RECAPITULATION:

RECAPITULATION OF FUNDING TO DATE BY TASK ORDER PERIOD
CONTRACT NO. 68HERC20D0016
TASK ORDER NO. 68HERC20F0287

Period of Performance - FROM 9/15/2020 through 6/30/2024

FUNDING ACTION	**FUNDING**	
Total Task Order Amount:	$	108,969.38
Initial Incremental Funding:	$	108,969.38
Balance Unfunded	$	0.00

SECTION F - Deliveries or Performance

F-1 Local Clauses EPA-F-12-101 PERIOD OF PERFORMANCE

The period of performance of this Task Order shall be from 9/15/2020 through 6/30/2024 inclusive of all required reports.

SECTION G - Contract Administration Data

G-1 Local Clauses EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order-Level Contracting Officers Representatives (CORs)/Project Officers for this contract are as follows:

Donna Keclik, 312-886-6766, keclik.donna@epa.gov (TOCOR)

Belinda Montgomery, 312-886-5949, montgomery.belinda@epa.gov (Alternate TOCOR)

Contracting Officials responsible for administering this contract are as follows:

Gerold Young, 513-487-2660, Young.Gerold@epa.gov (Contracting Officer)

Matthew Huber, 513-569-7195, huber.matthew@epa.gov (Contract Specialist)

PERFORMANCE WORK STATEMENT
Contractor: Tetra Tech, Inc.
Contract No. 68HERC20D0016
Task Order 68HERC20F0287

TITLE: Refinement of Indiana Department of Environmental Management (IDEM) Index of Biotic Integrity (IBI) for Biological Communities in Coolwater Streams

SHORT TITLE: IDEM IBI COOLWATER STREAMS

PERIOD OF PERFORMANCE: Date of award through June 30, 2024

Task Order Contacting Officer Representative (TOCOR):
Donna Keclik
U.S. EPA, Region 5
77 W. Jackson Blvd.
Mail Code: (WW-16J)
Chicago, IL. 60604
312-886-6766
keclik.donna@epa.gov

Alternate TOCOR:
Belinda Montgomery
U.S. EPA, Region 5
77 W. Jackson Blvd.
Mail Code: (WW-16J)
Chicago, IL. 60604
312-886-5949
montgomery.belinda@epa.gov

Background

Biological assemblages differ greatly between warm, cool, and coldwater environments. Cool or cold summer maximum ambient stream temperatures naturally support assemblages diminished in the number of taxa present and number of individuals present as compared with warmwater streams. This may result in some streams being falsely identified as impaired on the state's impaired waters list (303(d) list) when evaluated using Indiana's Index of Biotic Integrity (IBI) for biological assemblages. To avoid listing unimpaired streams on the 303(d) list, IDEM needs to further develop tools that accurately evaluate biological assemblages' expectations based on naturally occurring stream temperature variation.

In 2007, the Indiana Department of Environmental Management (IDEM) worked with the Indiana Biological Survey, Aquatic Research Center to develop a Coolwater IBI for fish communities (Development of Coolwater Index of Biotic Integrity Expectations for Use in Streams and Rivers of Indiana); however, IDEM has not used the coolwater IBI for aquatic life use assessments because the coolwater stream temperature model appears to inappropriately

classify streams as coolwater. The model was created using only 28 sites from the Lower Wabash and Kankakee River basins collected by USGS in 2004. IDEM investigated using the coolwater IBI for 2008 and 2009 calculations; however, many of the streams sampled (like the Iroquois River, Kankakee River, Mississinewa River, Eel River, Tippecanoe River, and Middle Fork Wildcat Creek) were inappropriately classified as coolwater based on the temperature model for one stream temperature value taken the day of fish community sampling (fish are collected June-October). Using the coolwater IBI temperature model and the temperature value taken the day of fish community sampling, the coolwater IBI calibration rather than the warmwater calibration was used resulting in a 5-12-point decrease in the total IBI score for nine of 38 sites sampled in 2008. Of those nine sites, at least two should have been classified as warmwater rather than coolwater as some of the temperature measurements taken at the sites during 2008 exceeded 26°C.

The funding for this project would involve identification of coolwater streams in Indiana, validation of models by having IDEM deploy temperature loggers and collect biological assemblages at sites around the State, and modification of new biotic indices to accurately evaluate biological assemblage expectations for coolwater streams.

This Task Order will be to enhance Indiana's monitoring strategy by refining biological indicators for coolwater streams used to assess aquatic life use in:

- IDEM's Integrated Report, thus satisfying 305(b) and 303(d) reporting requirements to EPA,
- Watershed characterization projects which identify critical areas and chemical/physical stressors to the biological communities, and,
- Identifying improvements in the biological communities following watershed restoration efforts.

The refinement of biological indices for coolwater streams will provide a more accurate assessment of ecological effects, thus improving IDEM's diagnostic ability to identify causes of degradation in water quality.

Approach

The Contractor shall identify temperature tipping points for biological assemblages by plotting cold/cool taxa and warm taxa vs. maximum water temperature. This step involves the transfer of biological and chemical information from the IDEM Assessment Information Management System (AIMS) to the Contractor who will conduct basic Quality Assurance/Quality Control (QA/QC) of the data (i.e., checking for values, locations out of range). Identify potential coolwater streams in Indiana by using the temperature tipping points for coolwater taxa and modeled stream temperature data that are currently available. Stream temperature predictions can be found using EPA The StreamCat Dataset: Accumulated Attributes for NHDPlusV2 (Version 2.1) Catchments for the Conterminous United States: Reference Stream Temperature Predictions. The Contractor in consultation with IDEM and EPA will modify new biological indices for coolwater streams based on IDEM's available data.

Scope of Work:

The purpose of this project is to identify coolwater streams, verify the models used by deploying temperature loggers and collecting additional biological data, and ultimately refine biological indices for coolwater streams. The project will be undertaken in 5 tasks:

Task 1. Communications and Administration.

Task 2. Quality Assurance Project Plan (QAPP).

Task 3. Identify probable temperature regimes for streams in Indiana, emphasizing coolwater systems.

Task 4. Technical support during IDEM's ambient monitoring phase.

Task 5. Modify biological indices to be responsive to human disturbance in coolwater streams.

Task 1: Communications and Administration

The contractor shall provide management and administrative support for the project throughout its duration. The contractor shall participate in calls with the U. S. EPA TOCOR to discuss points of contact, roles and responsibilities, Quality Assurance Project Plan (QAPP) protocols, timelines, the schedule of benchmarks, milestones and deliverables, establish dates and times for monthly calls (if necessary) and monthly technical progress reports and general task order administrative and technical information. EPA anticipates times when monthly calls and technical reports will not be necessary due to low activity on the contractor's work during times on this TO. This will be discussed on the kick-off call. EPA anticipates 36 monthly calls.

Task 2: QAPP

The contractor shall provide a QAPP that fully addresses the use of secondary data for purposes of this task order. The process for the QAPP development and review is:

- Within 15 business days after task order award, Tetra Tech will submit for EPA review a draft QAPP documenting how quality assurance (QA) and quality control (QC) will be applied to the compilation, evaluation, analysis and use of environmental data.
- U.S. EPA will review the draft QAPP, and provide the Contractor with written approval or written comments.
- Tetra Tech will submit a final QAPP within 5 business days of receipt of the written comments on the draft QAPP, unless otherwise instructed by the TOCOR.

QAPP Requirements

The QAPP will be consistent with the use of existing (secondary) data and data collected by IDEM under their Quality Management Plan (QMP) (Indiana QMP https://www.in.gov/idem/files/idem_qmp_2018.pdf) . The QAPP will provide enough detail to clearly describe objectives of the project supported by the task order, the type of data compiled or used under this task order to support the project objectives; the quality objectives needed to

ensure that the data support the project objectives; and the quality assurance (QA) and quality control (QC) activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Deliverables

Task 2A Draft QAPP.

Task 2B Final QAPP.

Task 3. Identify probable temperature regimes for streams in Indiana, emphasizing coolwater systems.

The Contractor shall compile existing biological and chemical data collected from IDEM. This data shall be reviewed for QA/QC use. The Contactor shall also include taxa temperature preferences into the relational databases. These preferences will be as established in published literature, reports, and citable databases. Once the preferences are established the Contractor shall collect information on predicted and modeled temperature regimes in streams throughout Indiana, including StreamCat model predictions and other hydrological models. The contractor shall then conduct preliminary analyses to associate observed stream temperature, biological assemblage thermal characteristics, and modeled/predicted stream temperatures and establish a disturbance gradient so that least-disturbed reference sites can be distinguished from sites with varying degrees of stress. The gradient shall identify the cool-water status of streams using indicators of: observed water quality, observed biological thermal characteristics, modeled/predicted stream temperatures, and the gradient of disturbance.

Sub-tasks

Task 3A: Compilation of existing biological and chemical quality-controlled data supplied by IDEM organized in a relational database.

Task 3B: Incorporation of taxa temperature preferences into the relational database. These preferences will be discussed with EPA and IDEM for determination of the levels.

Task 3C: Collection of information on predicted and modeled temperature regimes in streams throughout Indiana, including StreamCat predictions and other hydrological models.

Task 3D: Preliminary analyses to associate observed stream temperature, biological assemblage thermal characteristics, and modeled/predicted stream temperatures. This preliminary analyses will be using common methods for determination which the contactor has used in the past on other similar projects.

Task 3E: Establish a disturbance gradient so that least-disturbed reference sites can be distinguished from sites with varying degrees of stress.

Task 3F: Identify the cool-water status of streams using indicators of: observed water quality, observed biological thermal characteristics, modeled/predicted stream temperatures, and the gradient of disturbance.

Deliverables

Discussion of actions in final Report under Task 6.

Task 4. Technical Support for IDEM's Ambient Monitoring Phase

The Contractor will work with IDEM and EPA TOCOR in selection of stream sites to deploy loggers. This selection will be based on IDEM's monitoring capacity and cool-water stream status identified in Task 3. IDEM will deploy the loggers in April 2021 and begin collecting biological and chemical samples, along with habitat observations through October 2022. The Contractor will provide technical assistance (no site visits) to IDEM in this deployment as needed. The Contactor will also audit the process as data become available. It is anticipated that the data will be available on a monthly basis during data collection. The Contractor will receive and summarize the continuous monitoring temperature records as they become available from IDEM, with the assumption that the data will be delivered on a monthly frequency. After compiling and verifying the new monitoring data and continuous monitoring summaries, the Contractor shall incorporate this new data into the relational database developed in Task 3.

Sub-tasks

Task 4A: Investigate temperature logger deployment strategies.

Task 4B: Select stream sites for deployment of 90 loggers which will have a preliminary selection and a final selection.

Task 4C: Provide technical support (no site visits) to IDEM during the deployment phase.

Task 4D: Summarize continuous monitoring temperature records to characterize the temperature regimes of each stream on a monthly basis.

Task 4E: Collect, compile, and verify monitoring data and continuous monitoring summaries, and incorporate new data into the relational database from Task 3.

Deliverables

Task 4B-1 preliminary selection for deployment.

Task 4B-2 final selection for deployment.

All sub tasks under Task 4 will have a chapter discussing actions in final Report under Task 6.

Task 5. Modify biological indices to be responsive to human disturbance in coolwater streams:

Once the Contractor has completed Task 4 they shall confirm the disturbance gradient for all sites/events with complete data sets including biological, water quality, and continuous temperature summaries. When reviewing, the contactor shall confirm that the cool-water streams in Indiana are biologically homogenous and investigate possible site classes based on biological composition in the least-disturbed sites. The Contactor shall then calculate a variety of biological metrics that are expected to respond consistently to the disturbance gradient. The

Contactor shall test the biological metric responsiveness and variability in relation to the disturbance gradient. In testing the metric, the Contractor shall test metric combinations for optimal performance in predicting site disturbance in cool-water streams, using existing index formulations as the basis for modifications. A final report shall be prepared which will include background information on the process, methods used, results and conclusions for the gradient development.

Sub Tasks

Task 5A: Confirm the disturbance gradient for all sites/events with complete data sets (biological, water quality, and continuous temperature summaries) using industry common methods.

Task 5B: Confirming that the cool-water streams in Indiana are biologically homogenous using industry common methods.

Task 5C: Calculate a variety of biological metrics that are expected to respond consistently to the disturbance gradient using industry common methods and input from EPA TOCOR and IDEM.

Task 5D: Test the biological metric responsiveness and variability in relation to the disturbance gradient using industry common methods.

Task 5E: Test metric combinations for optimal performance in predicting site disturbance in cool-water streams, using existing index formulations as the basis for modifications using industry common methods.

Deliverables

Methods used and outcomes of the process and steps in Task 5 will be discussed in final Report under Task 6.

Task 6 Project reporting

The Contractor shall review actions taken in tasks 3-5 above compiling actions and recommendations used in the development of the coolwater IBI for Indiana streams. This report shall include information such as, but not limited to discussions on background, methods, results and conclusions for loggers chosen, models used, rational for logger deployment and other relevant information used to develop the coolwater IBI for IDEM.

The Contractor shall provide a draft report with structure and format as acceptable to the EPA. The Final report shall be delivered after the Contractor incorporates the review comments from EPA and IDEM. The draft report is due by May 1, 2024 and the final report is due June 30, 2024.

Deliverables

Task 6A Draft Report.

Task 6B Final Report.

Deliverables and Schedule

Task No.	Deliverable	Estimated Schedule	Estimated dates
1	Progress Reports Other Communication	Due when activity on the tasks are occuring. During months when monitoring is taking place report due if an issue occurs. Due upon request by the TOCOR	
2A	Draft QAPP	Due 15 business days after award of Task Order	July 30, 2020
2B	Final QAPP	Due 5 business days after receipt of the written comments on the draft QAPP	Sept 30, 2020
3A	Compilation of existing biological and chemical quality-controlled data organized in a relational database.	Due 4 months after award	November 1, 2020
3B	Incorporation of taxa temperature preferences into the relational database.	Due 5 months after award	December 15, 2020
3C	Collection of information on predicted and modeled temperature regimes in streams throughout Indiana, including StreamCat predictions and other hydrological models.	Due 5 months after award	December 15, 2020
3D	Preliminary analyses to associate observed stream temperature, biological assemblage thermal characteristics, and modeled/predicted stream temperatures.	Due 5 months after award	December 15, 2020
3E	Establish a disturbance gradient so that least-disturbed reference sites can be distinguished from sites with varying degrees of stress. Using 2018 and 2019 data update the reference site list and disturbance gradient, and 2014 to 2017 where appropriate	Due 5 months after award	December 15, 2020
3F	Identify the cool-water status of streams using indicators of: observed water quality,	Due 6 months after award	January 2, 2020

	observed biological thermal characteristics, modeled/predicted stream temperatures, and the gradient of disturbance.		
4A	Task 4A: Investigate temperature logger deployment strategies within first few months.	Due 5 months after award	December 1, 2020
4B	Select stream sites for deployment preliminary Final selection	Preliminary site selection due 6 months after award	January 2, 2021
		Final selection due 7 months after award	February 1, 2021
4C	Provide technical support to IDEM during the deployment phase	Begin 9 months after award and continue as needed while loggers are deployed	April 1, 2021 and continued as needed while IDEM have loggers deployed
4D	Summarize continuous monitoring temperature records to characterize the temperature regimes of each stream after 4e and provide technical assistance as needed.	Begin 10 months after award and continued as data is submitted. Final data transfer expected to be delivered by IDEM by Nov 30, 2022	Summarization of final data by January 30, 2023
4E	Collect, compile, and verify monitoring data (habitat, chemistry and biology) and continuous monitoring summaries, and incorporate new data into the relational database from Task 3 provide technical assistance as needed.	Begin 13 months after award and continued as data is submitted. Final data transfer expected to be delivered by IDEM by March 30, 2023.	As data becomes available (assuming monthly bases)through March 30, 2023 Final review of data May 30, 2023
5A	Confirm the disturbance gradient for all sites/events with complete data sets (biological, water quality, and continuous temperature summaries).	Due two months after receiving final data sets. Final data sets will be transfered through March 30, 2023.	Due two months after receiving final data sets but no later than May 30, 2023
5B	Confirm that the cool-water streams in Indiana are biologically homogenous.	Due two months after receiving final data sets from IDEM. Final data sets will be transferred through March 1, 2023.	Due two months after receiving final data sets

			approximately May 30, 2023
5C	Calculate a variety of biological metrics that are expected to respond consistently to the disturbance gradient.	Due 4 months after IDEM submittal of final data sets.	approximately July 30, 2023 dependent on IDEM
5D	Test the biological metric responsiveness and variability in relation to the disturbance gradient	Due 8 months after IDEM submittal of final data sets	approximately November 30, 2023 dependent on IDEM
5E	Test metric combinations for optimal performance in predicting site disturbance in cool-water streams, using existing index formulations as the basis for modifications	Due 12 months after IDEM submittal of final data sets	No later than March 1, 2024
6A	Draft report background, methods, results and conclusions	Due 46 months after award	No later than May 1, 2024
6B	Final report background, methods, results and conclusions	Due 48 months after award but no later than Jun 30, 2024	No later than June 30, 2024

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
P00001	See Block 16C		

6. ISSUED BY CODE CAD

CAD
US Environmental Protection Agency
26 West Martin Luther King Drive
Mail Code: W136
Cincinnati OH 45268-0001

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

TETRA TECH, INC.
Attn: Andrew Parker
10306 EATON PL STE 340
FAIRFAX VA 220302201

CODE 198549560 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED *(SEE ITEM 11)*

X 10A. MODIFICATION OF CONTRACT/ORDER NO.
68HERC20D0016
68HERC20F0287

10B. DATED *(SEE ITEM 13)*
09/14/2020

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended , by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted ; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted , such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
X	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☒ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

DUNS Number: 198549560
TOCOR: Donna Keclik Max Expire Date: 12/02/2024 InvoiceApprover: Donna Keclik Alt Invoice App: Belinda Montgomery
The purpose of this modification is to incorporate the attached EPA blanket administrative modification signed by Raoul Scott on July 30, 2020. All other terms and conditions remain unchanged.

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		Gerold D. Young	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		ELECTRONIC SIGNATURE *(Signature of Contracting Officer)*	09/30/2020

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Payment: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 Period of Performance: 09/15/2020 to 06/30/2024				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES

2. AMENDMENT/MODIFICATION NUMBER	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQUISITION NUMBER	5. PROJECT NUMBER *(If applicable)*
	08/13/2020		

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
Raoul D. Scott, Director OMS/ARM/OAS/Policy, Training and Oversight Division US Environmental Protection Agency, Mail Code 3802R 1200 Pennsylvania Avenue, NW Washington, DC 20004			

8. NAME AND ADDRESS OF CONTRACTOR *(Number, street, county, State and ZIP Code)*	(X)	9A. AMENDMENT OF SOLICITATION NUMBER
To All EPA Contractors	☐	9B. DATED *(SEE ITEM 11)*
	☒	10A. MODIFICATION OF CONTRACT/ORDER NUMBER To all EPA Contracts and Orders
		10B. DATED *(SEE ITEM 13)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NUMBER AS DESCRIBED IN ITEM 14.

CHECK ONE	
☐	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NUMBER IN ITEM 10A.
☒	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
☐	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☒ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

This contract/order is being modified in accordance with the applicability instructions in interim FAR Case 2019-009, and FAR 4.2105, requiring contracting officers to include FAR clause 52.204-25, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

See attached for the full text version of FAR 52.204-25. Contractor Acknowledgment of receipt required.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		Raoul D. Scott, Director Policy, Training and Oversight Division	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		RAOUL SCOTT Digitally signed by RAOUL SCOTT Date: 2020.07.30 11:40:17 -04'00' *(Signature of Contracting Officer)*	

Previous edition unusable

STANDARD FORM 30 (REV. 11/2016)
Prescribed by GSA FAR (48 CFR) 53.243

52.204-25 Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

As prescribed in 4.2105(b) and in the applicability instructions in interim FAR Case 2019-009, insert the following clause:

Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Aug 2020)

(a) *Definitions.* As used in this clause—

Backhaul means intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network (e.g., connecting cell phones/towers to the core telephone network). Backhaul can be wireless (e.g., microwave) or wired (e.g., fiber optic, coaxial cable, Ethernet).

Covered foreign country means The People's Republic of China.

Covered telecommunications equipment or services means–

(1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);

(2) For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);

(3) Telecommunications or video surveillance services provided by such entities or using such equipment; or

(4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

Critical technology means–

(1) Defense articles or defense services included on the United States Munitions List set forth in the International Traffic in Arms Regulations under subchapter M of chapter I of title 22, Code of Federal Regulations;

(2) Items included on the Commerce Control List set forth in Supplement No. 1 to part 774 of the Export Administration Regulations under subchapter C of chapter VII of title 15, Code of Federal Regulations, and controlled-

(i) Pursuant to multilateral regimes, including for reasons relating to national security, chemical and biological weapons proliferation, nuclear nonproliferation, or missile technology; or

(ii) For reasons relating to regional stability or surreptitious listening;

(3) Specially designed and prepared nuclear equipment, parts and components, materials, software, and technology covered by part 810 of title 10, Code of Federal Regulations (relating to assistance to foreign atomic energy activities);

(4) Nuclear facilities, equipment, and material covered by part 110 of title 10, Code of Federal Regulations (relating to export and import of nuclear equipment and material);

(5) Select agents and toxins covered by part 331 of title 7, Code of Federal Regulations, part 121 of title 9 of such Code, or part 73 of title 42 of such Code; or

(6) Emerging and foundational technologies controlled pursuant to section 1758 of the Export Control Reform Act of 2018 (50 U.S.C. 4817).

Interconnection arrangements means arrangements governing the physical connection of two or more networks to allow the use of another's network to hand off traffic where it is ultimately delivered (e.g., connection of a customer of telephone provider A to a customer of telephone company B) or sharing data and other information resources.

Reasonable inquiry means an inquiry designed to uncover any information in the entity's possession about the identity of the producer or provider of covered telecommunications equipment or services used by the entity that excludes the need to include an internal or third-party audit.

Roaming means cellular communications services (e.g., voice, video, data) received from a visited network when unable to connect to the facilities of the home network either because signal coverage is too weak or because traffic is too high.

Substantial or essential component means any component necessary for the proper function or performance of a piece of equipment, system, or service.

(b) Prohibition. (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. The Contractor is prohibited from providing to the Government any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104.

(2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract, or extending or renewing a contract, with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract.

(c) *Exceptions.* This clause does not prohibit contractors from providing—

(1) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

(2) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(d) Reporting requirement.

(1) In the event the Contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the Contractor is notified of such by a subcontractor at any tier or by any other source, the Contractor shall report the information in paragraph (d)(2) of this clause to the Contracting Officer, unless elsewhere in this contract are established procedures for reporting the information; in the case of the Department of Defense, the Contractor shall report to the website at https://dibnet.dod.mil. For indefinite delivery contracts, the Contractor shall report to the Contracting Officer for the indefinite delivery contract and the Contracting Officer(s) for any affected order or, in the case of the Department of Defense, identify both the indefinite delivery contract and any affected orders in the report provided at https://dibnet.dod.mil.

(2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause

(i) Within one business day from the date of such identification or notification: the contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: any further available information about mitigation actions undertaken or recommended. In addition, the Contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) *Subcontracts.* The Contractor shall insert the substance of this clause, including this paragraph (e) and excluding paragraph (b)(2), in all subcontracts and other contractual instruments, including subcontracts for the acquisition of commercial items.

(End of clause)